

REMARKS

This application has been carefully reviewed in light of the Office Action dated November 10, 2003 (Paper No. 6). Claims 1 to 3, 5 to 7, 9 to 15, 17 to 19 and 21 to 26 are in the application, of which Claims 1, 7, 13, 19, 25 and 26 are independent claims. Reconsideration and further examination are respectfully requested.

Claims 1 to 26 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,633,996 (Hayashi). Claims 4, 8, 16 and 20 have been cancelled without prejudice or disclaimer of subject matter, and without conceding the correctness of the rejections. Reconsideration and withdrawal of the remaining rejections are respectfully requested.

The present invention relates to split tree data structures. According to one aspect of the present invention, split trees are created from an input tree. The input tree comprises a plurality of nodes. The present invention determines which of the plurality of nodes fit into a galley target. Nodes that fit into the galley target are marked with a mark associated with the galley target. The split tree that is formed identifies each tree fragment by a respective mark and represents both the input tree and at least one tree fragment obtained by splitting the input tree.

With specific reference to the claims, independent Claim 1 recites a method of creating a split tree from an input, wherein the input tree comprises a plurality of nodes. The method comprises the step of determining which of the plurality of nodes fit into a galley target. The determining step comprises the sub-steps of (a1) setting one of the plurality of nodes as a current node for the galley target, (a2) comparing the size of the current node with available space in the galley target, (a3) deciding that the current node

fits into the galley target, if the size of the current nodes is not greater than the available space, and (a4) performing additional steps if the size of the current node is greater than the available steps. In particular, if the size of the current node is greater than the available space, the determining step performs the further sub-steps of (a4i) determining whether the current node has at least one child node, (a4ii) setting one of the child nodes as the new current node if the current node has at least one child node, and (a4iii) recursively executing steps (a2) to (a4) with respect to the new current node. The method further comprises the step of marking the nodes that fit into the galley target with a mark specific to the galley target so as to create a split tree in which each tree fragment is identified by a respective mark. The split tree represents the input tree and at least one tree fragment obtained by splitting the input tree.

Independent Claims 13 and 25 are apparatus and computer program product claims, respectively, that correspond generally to the method of independent Claim 1.

The applied art is not seen to disclose or suggest the features of independent Claims 1, 13 and 25, and in particular, is not seen to disclose or suggest at least the features of determining which of the plurality of nodes fit into a galley target as described by steps (a1) to (a4) and sub-steps (a4i) to (a4iii) above, and marking the nodes that fit into the galley target with a mark specific to the galley target so as to create a split tree in which each tree fragment is identified by a respective mark, wherein the split tree represents the input tree and at least one tree fragment obtained by splitting the input tree.

Hayashi relates to a device and method for the layout of a structured document using multi-column areas. Hayashi is seen to teach that a document is laid out

according to layout directive means, which specifies either a column structure or a multi-column covering frame structure. Content layout means, utilizing identifying means, identifies which structure has been directed and lays out the document in the recognized structure.

In the rejection of now-cancelled Claim 4, the Office Action took the position that Hayashi's layout directive storing means relates to the present invention's feature of determining which of the plurality of nodes fit into each galley target (column 24, lines 25-31). However, Hayashi is not seen in any way to teach the present invention's determining step as described in steps (a1) to (a4) and sub-steps (a4i) to (a4iii).

The Office Action further contends that Hayashi's content layout means relates to the present invention's feature of creating a split tree from an input tree (column 24, lines 33-38). Hayashi's content layout means is seen to teach that document content is laid out in a column or in a multi-column area according to a stored logical structure. Hayashi is merely seen to teach the layout of a structured document, and is not seen to teach the use of input trees, muchless that a split tree is formed from an input tree, wherein the split tree represents the input tree and at least one tree fragment obtained by splitting the input tree.

Furthermore, Hayashi is not seen to teach marking the nodes that fit into the galley target with a mark specific to the galley target so as to create a split tree in which each tree fragment is identified by a respective mark. As discussed above, Hayashi is not seen to teach the formation of a split tree with tree fragments, and as such, is not seen to teach that each tree fragment is identified by a respective mark.

Thus, Hayashi is not seen to teach or suggest determining which of the plurality of nodes fit into a galley target as described by steps (a1) to (a4) and sub-steps (a4i) to (a4iii) above, and marking the nodes that fit into the galley target with a mark specific to the galley target so as to create a split tree in which each tree fragment is identified by a respective mark, wherein the split tree represents the input tree and at least one tree fragment obtained by splitting the input tree.

Accordingly, based on the foregoing amendments and remarks, independent Claims 1, 13 and 25 are believed to be allowable over the applied references.

According to another aspect of the present invention, independent Claim 7 recites a method of forming at least one tree fragment from a split tree, wherein nodes of a split tree are marked with marks. The method comprises the steps of identifying the nodes of a split tree marked with respective marks, each respective mark being associated with a respective tree fragment, and creating respective tree fragments from the nodes marked with the respective marks.

Independent Claims 19 and 26 are apparatus and computer program product claims, respectively, that correspond generally to the method of independent Claim 7.

The applied art is not seen to teach the features of independent Claims 7, 19 and 26. As discussed above, Hayashi is merely seen to teach the layout of a structured document, and is not seen to teach the formation of split trees. Furthermore, Hayashi is not seen in any way to teach or suggest that tree fragments are created from nodes that have been marked.

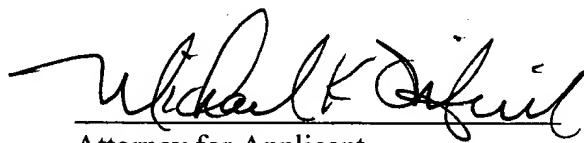
Accordingly, based on the foregoing amendments and remarks, independent Claims 7, 19 and 26 are believed to be allowable over the applied references.

The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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